

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NMOCD

Hobbs

HOBBS OCD

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on page 2**

APR 02 2018

RECEIVED

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM66925
2. Name of Operator OXY USA INC Contact: DAVID STEWART E-Mail: david_stewart@oxy.com		6. If Indian, Allottee or Tribe Name
3a. Address P.O. BOX 50250 MIDLAND, TX 79710	3b. Phone No. (include area code) Ph: 432-685-5717	7. If Unit or CA/Agreement, Name and/or No.
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 17 T24S R32E SWSE 280FSL 2624FEL 32.210987 N Lat, 103.696671 W Lon		8. Well Name and No. MESA VERDE BS UNIT 6
		9. API Well No. 30-025-44042
		10. Field and Pool or Exploratory Area MESA VERDE BONE SPRING
		11. County or Parish, State LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

OXY USA Inc. respectfully requests to amend the APD for the Mesa Verde BS Unit #6 - API No. 30-015-44042.

1. Amend the proposed TD to 20650'M 10580'V.
2. Amend the directional drilling plans, see attached.
3. Amend the intermediate casing @ 0-4721' and production casing @ 0-20650', see attached.
4. Amend the surface, intermediate and production casing cementing program. OXY also requests to pump a two stage production casing cement job with the first stage being pumped conventionally with the calculated TOC @ the Brushy Canyon and the second stage performed as a bradenhead squeeze with

well drilled already

14. I hereby certify that the foregoing is true and correct. Electronic Submission #403315 verified by the BLM Well Information System For OXY USA INC, sent to the Hobbs Committed to AFMSS for processing by JENNIFER SANCHEZ on 03/21/2018 ()	
Name (Printed/Typed) DAVID STEWART	Title SR. REGULATORY ADVISOR
Signature (Electronic Submission)	Date 02/05/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____	Title _____	Date _____
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		
Office _____		
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make any statement or representation to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.		

(Instructions on page 2)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

Additional data for EC transaction #403315 that would not fit on the form

32. Additional remarks, continued

planned cement from the top of the Brushy Canyon to surface, see attached.

5. Amend the mud program, depth and type, see attached.

Note: This well was originally permitted as the Mesa Verde 17-8 Federal Com 4H.

Unit Number: NMNM137096X

OXY USA Inc. - Mesa Verde BS Unit #6 – 30-025-44042 - Amended Drill Plan
Mesa Verde 17-8 Federal Com #4H

OXY USA Inc. respectfully requests approval for the following changes from the approved permit:

Casing Program

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	Buoyant Buoyant			
	From (ft)	To (ft)					SF Collapse	SF Burst	Body SF Tension	Joint SF Tension
17.5	0	969	13.375	54.5	J55	BTC	1.125	1.2	1.4	1.4
12.25	0	4721	9.625	47	J55	BTC	1.125	1.2	1.4	1.4
8.5	0	20650	5.5	20	P-110	DQX	1.125	1.2	1.4	1.4
SF Values will meet or Exceed										

Cementing Program

Casing	# Sk	Wt. (lb/gal)	Yld (ft3/sack)	H2O (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface	813	14.2	1.68	6.53	6:50	Class C Cement, Accelerator
Intermediate Casing	788	12.9	1.74	8.67	15:07	Pozzolan Cement, Retarder
	156	14.8	1.326	6.34	6:31	Class C Cement, Retarder, Dispersant, Salt
Production Casing 1st Stage	240	13.2	1.671	8.44	22:36	Class C Cement
	1767	13.2	1.65	8.59	16:22	Class H Cement, Retarder, Dispersant, Salt
Production Casing 2nd Stage (Bradenhead Squeeze)	1069	12.9	1.872	10.11	4:21	Class C Cement, Accelerator

Casing String	Top of Lead (ft)	Bottom of Lead (ft)	Top of Tail (ft)	Bottom of Tail (ft)	% Excess Lead	% Excess Tail
Surface	N/A	N/A	0	969	N/A	100%
Intermediate Casing	0	4221	4221	4721	75%	20%
1st Stage Production Casing	6911	8574	8574	20650	5%	5%
2nd Stage Production Casing (Bradenhead Squeeze)	0	6911	N/A	N/A	25%	N/A

OXY USA Inc. - Mesa Verde BS Unit #6 – 30-025-44042 - Amended Drill Plan
Mesa Verde 17-8 Federal Com #4H

Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	969	Water-Based Mud	8.4-8.6	40-60	N/C
969	4721	Brine	9.8-10.0	35-45	N/C
4721	20650	Oil-Based Mud	8.2-9.2	38-50	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Oxy will use a closed mud system.

Total estimated cuttings volume: 1953.2 bbls.

Schlumberger

OXY

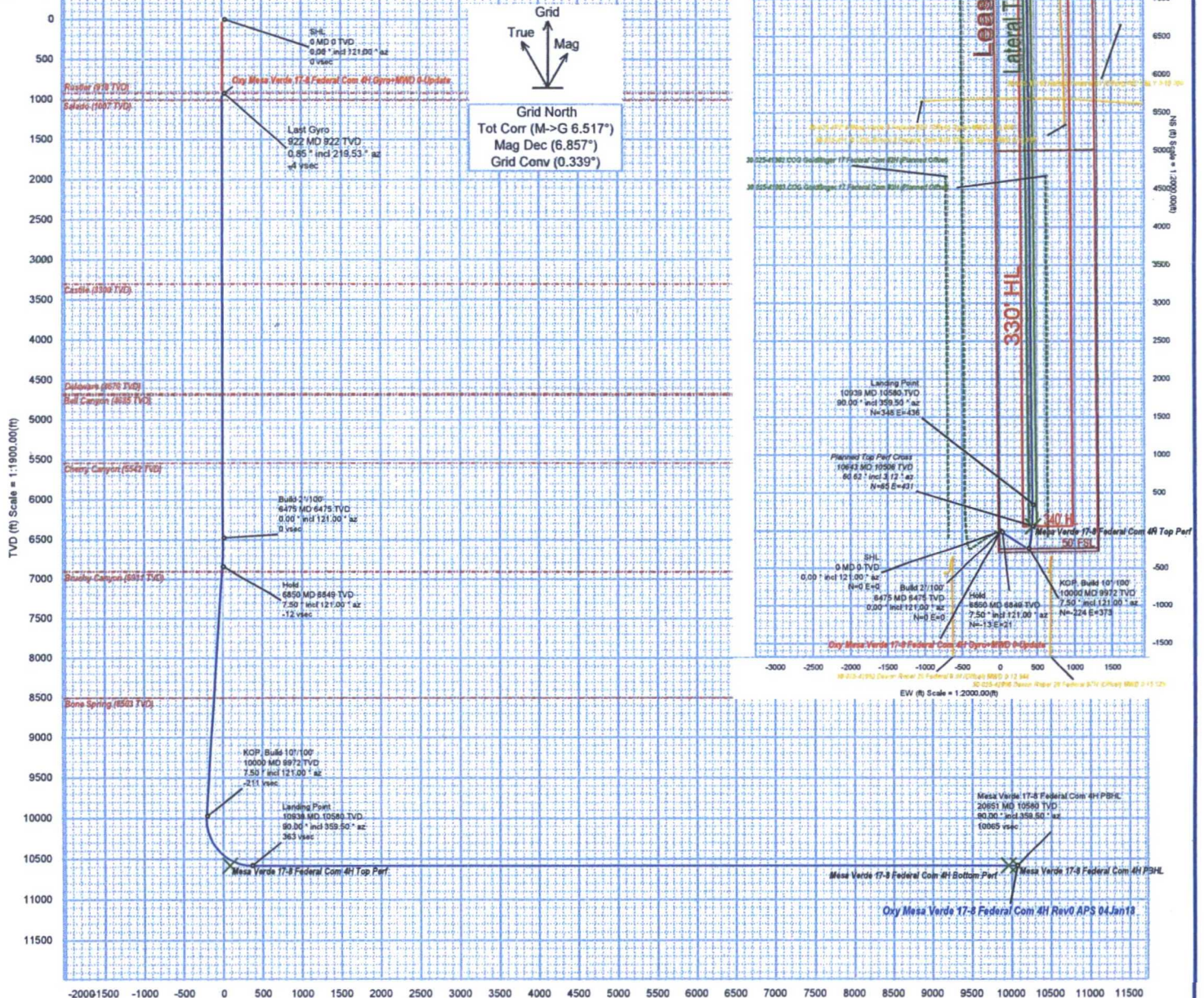
OXY

Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Mesa Verde 17-8 Federal Com 4H	NM Lea County (NAD 83)	Oxy Mesa Verde 17-8 Federal Com 4H

Gravity & Magnetic Parameters	Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Miscellaneous
Model: HDGM 2017 Dip: 89.338° Date: 05-Jan-2018 MagDec: 6.857° FS: 48944.854nT Gravity FS: 998.432mg (0.89985 Based)	Lat: N 32 12 38.56 Northing: 444974.64NUS Lon: W 103 41 48.02 Easting: 738243.71NUS	Grid Conv: 0.3394 Scale Fact: 0.9999535	Slot: 17-8 Federal Com TVD Ref: RKB=26.5'(3586.1ft above MSL) Plan: Oxy Mesa Verde 17-8 Federal Com 4H Rev0 APS 04Jan18

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(4)/S(-)	E(4)/W(-)	DLS
SHL	0.00	0.00	121.00	0.00	0.00	0.00	0.00	
Rustler	918.00	0.00	121.00	918.00	0.00	0.00	0.00	
Salado	1007.00	0.00	121.00	1007.00	0.00	0.00	0.00	
Castle	3300.00	0.00	121.00	3300.00	0.00	0.00	0.00	
Delaware	4670.00	0.00	121.00	4670.00	0.00	0.00	0.00	
Bell Canyon	4685.00	0.00	121.00	4685.00	0.00	0.00	0.00	
Cherry Canyon	5542.00	0.00	121.00	5542.00	0.00	0.00	0.00	
Build 2'/100'	6475.00	0.00	121.00	6475.00	0.00	0.00	0.00	
Hold	6849.78	7.50	121.00	6848.71	-11.87	-12.61	20.98	2.00
Brushy Canyon	6912.00	7.50	121.00	6911.00	-15.84	-16.83	28.81	0.00
Bone Spring	8518.33	7.50	121.00	8503.90	-117.38	-124.71	207.56	0.00
KOP, Build 10'/100'	9999.79	7.50	121.00	9971.80	-211.07	-224.25	373.21	0.00
Planned Top Perf Cross	10643.06	60.62	3.12	10505.78	80.05	65.04	430.59	10.00
Landing Point	10938.87	90.00	359.50	10580.00	362.99	347.95	436.45	10.00
Planned Bottom Perf Cross	20540.57	90.00	359.50	10580.00	9955.53	9949.28	352.71	0.00
Mesa Verde 17-8 Federal Com 4H PBHL	20650.59	90.00	359.50	10580.00	10065.45	10059.30	351.75	0.00



Oxy Mesa Verde 17-8 Federal Com 4H Rev0 APS 04Jan18 Proposal



Geodetic Report

(Def Plan)

Report Date:	January 09, 2018 - 04:48 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	OXY	Vertical Section Azimuth:	2.063 ° (Grid North)
Field:	NM Lea County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Mesa Verde 17-8 Federal Com 4H / Oxy Mesa Verde 17-8 Federal Com 4H	TVD Reference Datum:	RKB=26.5'
Well:	Oxy Mesa Verde 17-8 Federal Com 4H	TVD Reference Elevation:	3586.100 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3599.600 ft above MSL
UWI / API#:	Unknown / 30-025-44042	Magnetic Declination:	6.857 °
Survey Name:	Oxy Mesa Verde 17-8 Federal Com 4H Rev0 APS 04Jan18	Total Gravity Field Strength:	998.4318mgn (9.80665 Based)
Survey Date:	January 05, 2018	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	101.404 ° / 10735.896 ft / 6.327 / 1.015	Total Magnetic Field Strength:	48044.854 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.938 °
Location Lat / Long:	N 32° 12' 38.55655", W 103° 41' 48.01564"	Declination Date:	January 05, 2018
Location Grid N/E Y/X:	N 441074.640 ftUS, E 738243.710 ftUS	Magnetic Declination Model:	HDGM 2017
CRS Grid Convergence Angle:	0.3394 °	North Reference:	Grid North
Grid Scale Factor:	0.9999535	Grid Convergence Used:	0.3394 °
Version / Patch:	2.10.696.0	Total Corr Mag North->Grid North:	6.5174 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	121.00	0.00	0.00	0.00	0.00	N/A	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	100.00	0.00	121.00	100.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	200.00	0.00	121.00	200.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	300.00	0.00	121.00	300.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	400.00	0.00	121.00	400.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	500.00	0.00	121.00	500.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	600.00	0.00	121.00	600.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	700.00	0.00	121.00	700.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	800.00	0.00	121.00	800.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	900.00	0.00	121.00	900.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1000.00	0.00	121.00	1000.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1100.00	0.00	121.00	1100.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1200.00	0.00	121.00	1200.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1300.00	0.00	121.00	1300.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1400.00	0.00	121.00	1400.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1500.00	0.00	121.00	1500.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1600.00	0.00	121.00	1600.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1700.00	0.00	121.00	1700.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1800.00	0.00	121.00	1800.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	1900.00	0.00	121.00	1900.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2000.00	0.00	121.00	2000.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2100.00	0.00	121.00	2100.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2200.00	0.00	121.00	2200.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2300.00	0.00	121.00	2300.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2400.00	0.00	121.00	2400.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2500.00	0.00	121.00	2500.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2600.00	0.00	121.00	2600.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2700.00	0.00	121.00	2700.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2800.00	0.00	121.00	2800.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	2900.00	0.00	121.00	2900.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3000.00	0.00	121.00	3000.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3100.00	0.00	121.00	3100.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3200.00	0.00	121.00	3200.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3300.00	0.00	121.00	3300.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3400.00	0.00	121.00	3400.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3500.00	0.00	121.00	3500.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3600.00	0.00	121.00	3600.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3700.00	0.00	121.00	3700.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3800.00	0.00	121.00	3800.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	3900.00	0.00	121.00	3900.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4000.00	0.00	121.00	4000.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4100.00	0.00	121.00	4100.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4200.00	0.00	121.00	4200.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4300.00	0.00	121.00	4300.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4400.00	0.00	121.00	4400.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4500.00	0.00	121.00	4500.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4600.00	0.00	121.00	4600.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4700.00	0.00	121.00	4700.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4800.00	0.00	121.00	4800.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	4900.00	0.00	121.00	4900.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5000.00	0.00	121.00	5000.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5100.00	0.00	121.00	5100.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5200.00	0.00	121.00	5200.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5300.00	0.00	121.00	5300.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5400.00	0.00	121.00	5400.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5500.00	0.00	121.00	5500.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5600.00	0.00	121.00	5600.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5700.00	0.00	121.00	5700.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5800.00	0.00	121.00	5800.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	5900.00	0.00	121.00	5900.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	6000.00	0.00	121.00	6000.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	6100.00	0.00	121.00	6100.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	6200.00	0.00	121.00	6200.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	6300.00	0.00	121.00	6300.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	6400.00	0.00	121.00	6400.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
Build 2"/100'	6475.00	0.00	121.00	6475.00	0.00	0.00	0.00	0.00	441074.64	738243.71	N 32 12 39.56 W 103 41 48.02	
	6500.00	0.50	121.00	6500.00	-0.05	-0.06	0.09	2.00	441074.58	738243.80	N 32 12 39.56 W 103 41 48.01	
	6600.00	2.50	121.00	6599.96	-1.32	-1.40	2.34	2.00	441073.24	738246.05	N 32 12 39.54 W 103 41 47.99	
	6700.00	4.50	121.00	6699.77	-4.28	-4.55	7.57	2.00	441070.09	738251.28	N 32 12 39.51 W 103 41 47.93	
	6800.00	6.50	121.00	6799.30	-8.93	-9.48	15.78	2.00	441065.16	738259.49	N 32 12 39.46 W 103 41 47.83	
Hold	6849.78	7.50	121.00	6848.71	-11.87	-12.61	20.98	2.00	441062.03	738264.69	N 32 12 39.43 W 103 41 47.77	
	6900.00	7.50	121.00	6898.50	-15.94	-15.98	26.60	0.00	441058.66	738270.31	N 32 12 39.40 W 103 41 47.71	
	7000.00	7.50	121.00	6997.65	-21.37	-22.70	37.78	0.00	441051.94	738281.49	N 32 12 39.33 W 103 41 47.58	
	7100.00	7.50	121.00	7096.79	-27.69	-29.42	48.96	0.00	441045.22	738292.67	N 32 12 39.26 W 103 41 47.45	
	7200.00	7.50	121.00	7195.94	-34.01	-36.14	60.14	0.00	441038.50	738303.85	N 32 12 39.20 W 103 41 47.32	
	7300.00	7.50	121.00	7295.08	-40.34	-42.86	71.33	0.00	441031.79	738315.03	N 32 12 39.13 W 103 41 47.19	
	7400.00	7.50	121.00	7394.23	-46.66	-49.58	82.51	0.00	441025.07	738326.21	N 32 12 39.06 W 103 41 47.06	
	7500.00	7.50										

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7600.00	7.50	121.00	7592.52	-59.31	-63.01	104.87	0.00	441011.63	738348.58	N 32 12 38.93 W 103 41 46.80	
	7700.00	7.50	121.00	7691.67	-65.63	-69.73	116.05	0.00	441004.91	738359.76	N 32 12 38.86 W 103 41 46.67	
	7800.00	7.50	121.00	7790.81	-71.96	-76.45	127.23	0.00	440998.19	738370.94	N 32 12 38.79 W 103 41 46.54	
	7900.00	7.50	121.00	7889.96	-78.28	-83.17	138.42	0.00	440991.47	738382.12	N 32 12 38.73 W 103 41 46.41	
	8000.00	7.50	121.00	7989.10	-84.61	-89.89	149.60	0.00	440984.76	738393.30	N 32 12 38.66 W 103 41 46.28	
	8100.00	7.50	121.00	8088.25	-90.93	-96.61	160.78	0.00	440978.04	738404.48	N 32 12 38.59 W 103 41 46.15	
	8200.00	7.50	121.00	8187.39	-97.25	-103.33	171.96	0.00	440971.32	738415.66	N 32 12 38.52 W 103 41 46.02	
	8300.00	7.50	121.00	8286.54	-103.58	-110.04	183.14	0.00	440964.60	738426.85	N 32 12 38.46 W 103 41 45.89	
	8400.00	7.50	121.00	8385.68	-109.90	-116.76	194.33	0.00	440957.88	738438.03	N 32 12 38.39 W 103 41 45.76	
	8500.00	7.50	121.00	8484.83	-116.22	-123.48	205.51	0.00	440951.16	738449.21	N 32 12 38.32 W 103 41 45.63	
	8600.00	7.50	121.00	8583.98	-122.55	-130.20	216.69	0.00	440944.45	738460.39	N 32 12 38.26 W 103 41 45.50	
	8700.00	7.50	121.00	8683.12	-128.87	-136.92	227.87	0.00	440937.73	738471.57	N 32 12 38.19 W 103 41 45.37	
	8800.00	7.50	121.00	8782.27	-135.20	-143.64	239.05	0.00	440931.01	738482.75	N 32 12 38.12 W 103 41 45.24	
	8900.00	7.50	121.00	8881.41	-141.52	-150.36	250.23	0.00	440924.29	738493.93	N 32 12 38.05 W 103 41 45.11	
	9000.00	7.50	121.00	8980.56	-147.84	-157.07	261.42	0.00	440917.57	738505.11	N 32 12 37.99 W 103 41 44.98	
	9100.00	7.50	121.00	9079.70	-154.17	-163.79	272.60	0.00	440910.85	738516.30	N 32 12 37.92 W 103 41 44.85	
	9200.00	7.50	121.00	9178.85	-160.49	-170.51	283.78	0.00	440904.14	738527.48	N 32 12 37.85 W 103 41 44.72	
	9300.00	7.50	121.00	9277.99	-166.81	-177.23	294.96	0.00	440897.42	738538.66	N 32 12 37.79 W 103 41 44.59	
	9400.00	7.50	121.00	9377.14	-173.14	-183.95	306.14	0.00	440890.70	738549.84	N 32 12 37.72 W 103 41 44.47	
	9500.00	7.50	121.00	9476.29	-179.46	-190.67	317.33	0.00	440883.98	738561.02	N 32 12 37.65 W 103 41 44.34	
	9600.00	7.50	121.00	9575.43	-185.79	-197.39	328.51	0.00	440877.26	738572.20	N 32 12 37.58 W 103 41 44.21	
	9700.00	7.50	121.00	9674.58	-192.11	-204.11	339.69	0.00	440870.54	738583.38	N 32 12 37.52 W 103 41 44.08	
	9800.00	7.50	121.00	9773.72	-198.43	-210.82	350.87	0.00	440863.83	738594.56	N 32 12 37.45 W 103 41 43.95	
	9900.00	7.50	121.00	9872.87	-204.76	-217.54	362.05	0.00	440857.11	738605.74	N 32 12 37.38 W 103 41 43.82	
KOP, Build 10"/100'	9999.79	7.50	121.00	9971.80	-211.07	-224.25	373.21	0.00	440850.40	738616.90	N 32 12 37.32 W 103 41 43.69	
	10000.00	7.48	120.86	9972.01	-211.08	-224.26	373.23	10.00	440850.39	738616.93	N 32 12 37.32 W 103 41 43.69	
	10100.00	8.84	45.65	10071.24	-208.66	-222.23	384.35	10.00	440852.43	738628.04	N 32 12 37.34 W 103 41 43.56	
	10200.00	17.31	20.60	10168.63	-188.95	-202.88	395.11	10.00	440871.77	738638.80	N 32 12 37.53 W 103 41 43.43	
	10300.00	26.83	12.31	10261.22	-152.56	-166.82	405.18	10.00	440907.83	738648.87	N 32 12 37.88 W 103 41 43.31	
	10400.00	36.60	8.19	10346.20	-100.58	-115.13	414.26	10.00	440959.52	738657.95	N 32 12 38.39 W 103 41 43.20	
	10500.00	46.48	5.62	10420.97	-34.61	-49.39	422.08	10.00	441025.25	738667.77	N 32 12 39.04 W 103 41 43.11	
	10600.00	56.35	3.78	10483.28	43.36	28.41	428.39	10.00	441103.05	738672.08	N 32 12 39.81 W 103 41 43.03	
	10700.00	66.27	2.33	10531.23	130.96	115.90	433.01	10.00	441190.53	738676.69	N 32 12 40.68 W 103 41 42.97	
	10800.00	76.20	1.08	10563.36	225.52	210.42	435.79	10.00	441285.05	738679.47	N 32 12 41.61 W 103 41 42.93	
Landing Point	10900.00	86.14	359.93	10578.69	324.18	309.11	436.65	10.00	441383.73	738680.33	N 32 12 42.59 W 103 41 42.91	
	10938.87	90.00	359.50	10580.00	362.99	347.95	436.45	10.00	441422.57	738680.14	N 32 12 42.97 W 103 41 42.91	
	11000.00	90.00	359.50	10580.00	424.06	409.08	435.92	0.00	441483.70	738679.61	N 32 12 43.58 W 103 41 42.91	
	11100.00	90.00	359.50	10580.00	523.96	509.07	435.05	0.00	441583.69	738678.74	N 32 12 44.57 W 103 41 42.92	
	11200.00	90.00	359.50	10580.00	623.87	609.07	434.18	0.00	441683.68	738677.87	N 32 12 45.56 W 103 41 42.92	
	11300.00	90.00	359.50	10580.00	723.77	709.06	433.30	0.00	441783.67	738676.99	N 32 12 46.55 W 103 41 42.92	
	11400.00	90.00	359.50	10580.00	823.68	809.06	432.43	0.00	441883.66	738676.12	N 32 12 47.54 W 103 41 42.93	
	11500.00	90.00	359.50	10580.00	923.58	909.06	431.56	0.00	441983.65	738675.25	N 32 12 48.53 W 103 41 42.93	
	11600.00	90.00	359.50	10580.00	1023.49	1009.05	430.69	0.00	442083.64	738674.38	N 32 12 49.52 W 103 41 42.93	
	11700.00	90.00	359.50	10580.00	1123.39	1109.05	429.82	0.00	442183.63	738673.50	N 32 12 50.51 W 103 41 42.94	
	11800.00	90.00	359.50	10580.00	1223.30	1209.04	428.94	0.00	442283.63	738672.63	N 32 12 51.49 W 103 41 42.94	
	11900.00	90.00	359.50	10580.00	1323.20	1309.04	428.07	0.00	442383.62	738671.76	N 32 12 52.48 W 103 41 42.94	
	12000.00	90.00	359.50	10580.00	1423.11	1409.04	427.20	0.00	442483.61	738670.89	N 32 12 53.47 W 103 41 42.95	
	12100.00	90.00	359.50	10580.00	1523.01	1509.03	426.33	0.00	442583.60	738670.02	N 32 12 54.46 W 103 41 42.95	
	12200.00	90.00	359.50	10580.00	1622.91	1609.03	425.45	0.00	442683.59	738669.14	N 32 12 55.45 W 103 41 42.95	
	12300.00	90.00	359.50	10580.00	1722.82	1709.03	424.58	0.00	442783.58	738668.27	N 32 12 56.44 W 103 41 42.96	
	12400.00	90.00	359.50	10580.00	1822.72	1809.02	423.71	0.00	442883.57	738667.40	N 32 12 57.43 W 103 41 42.96	
	12500.00	90.00	359.50	10580.00	1922.63	1909.02	422.84	0.00	442983.57	738666.53	N 32 12 58.42 W 103 41 42.96	
	12600.00	90.00	359.50	10580.00	2022.53	2009.01	421.97	0.00	443083.56	738665.65	N 32 12 59.41 W 103 41 42.97	
	12700.00	90.00	359.50	10580.00	2122.44	2109.01	421.09	0.00	443183.55	738664.78	N 32 13 0.40 W 103 41 42.97	
	12800.00	90.00	359.50	10580.00	2222.34	2209.01	420.22	0.00	443283.54	738663.91	N 32 13 1.39 W 103 41 42.97	
	12900.00	90.00	359.50	10580.00	2322.25	2309.00	419.35	0.00	443383.53	738663.04	N 32 13 2.38 W 103 41 42.98	
	13000.00	90.00	359.50	10580.00	2422.15	2409.00	418.48	0.00	443483.52	738662.17	N 32 13 3.37 W 103 41 42.98	
	13100.00	90.00	359.50	10580.00	2522.06	2509.00	417.60	0.00	443583.51	738661.29	N 32 13 4.36 W 103 41 42.98	
	13200.00	90.00	359.50	10580.00	2621.96	2608.99	416.73	0.00	443683.50	738660.42	N 32 13 5.35 W 103 41 42.99	
	13300.00	90.00	359.50	10580.00	2721.87	2708.99	415.86	0.00	443783.50	738659.55	N 32 13 6.34 W 103 41 42.99	
	13400.00	90.00	359.50	10580.00	2821.77	2808.98	414.99	0.00	443883.49	738658.68	N 32 13 7.33 W 103 41 42.99	
	13500.00	90.00	359.50	10580.00	2921.68	2908.98	414.12	0.00	443983.48	738657.81	N 32 13 8.32 W 103 41 42.99	
	13600.00	90.00	359.50	10580.00	3021.58	3008.98	413.24	0.00	444083.47	738656.93	N 32 13 9.31 W 103 41 43.00	
	13700.00	90.00	359.50	10580.00	3121.48	3108.97	412.37	0.00	444183.46	738656.06	N 32 13 10.30 W 103 41 43.00	
	13800.00	90.00	359.50	10580.00	3221.39	3208.97	411.50	0.00	444283.45	738655.19	N 32 13 11.29 W 103 41 43.00	
	13900.00	90.00	359.50	10580.00	3321.29	3308.97	410.63	0.00	444383.44	738654.32	N 32 13 12.27 W 103 41 43.01	
	14000.00	90.00	359.50	10580.00	3421.20	3408.96	409.75	0.00	444483.43	738653.44	N 32 13 13.26 W 103 41 43.01	
	14100.00	90.00	359.50	10580.00	3521.10	3508.96	408.88	0.00	444583.43	738652.57	N 32 13 14.25 W 103 41 43.01	
	14200.00	90.00	359.50	10580.00	3621.01	3608.95	408.01	0.00	444683.42	738651.70	N 32 13 15.24 W 103 41 43.02	
	14300.00	90.00	359.50	10580.00	3720.91	3708.95	407.14	0.00	444783.41	738650.83	N 32 13 16.23 W 103 41 43.02	
	14400.00	90.00	359.50	10580.00	3820.82	3808.95	406.27	0.00	444883.40	738649.96	N 32 13 17.22 W 103 41 43.02	
	14500.00	90.00	359.50	10580.00	3920.72	3908.94	405.39	0.00	444983.39	738649.08	N 32 13 18.21 W 103 41 43.03	
	14600.00	90.00	359.50	10580.00	4020.63	4008.94	404.52	0.00	445083.38	738648.21	N 32 13 19.20 W 103 41 43.03	
	14700.00	90.00	359.50	10580.00	4120.53	4108.93	403.65	0.00	445183.38	738647.34	N 32 13 20.19 W 103 41 43.03	
	14800.00	90.00	359.50	10580.00	4220.44	4208.93	402.78	0.00	445283.37	738646.47	N 32 13 21.18 W 103 41 43.04	
	14900.00	90.00	359.50	10580.00	4320.34	4308.93	401.90	0.00	445383.36	738645.59	N 32 13 22.17 W 103 41 43.04	</

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	18200.00	90.00	359.50	10580.00	7617.19	7608.80	373.12	0.00	448683.07	738616.81	N 32 13 54.82 W 103 41 43.15	
	18300.00	90.00	359.50	10580.00	7717.10	7708.80	372.25	0.00	448783.06	738615.94	N 32 13 55.81 W 103 41 43.15	
	18400.00	90.00	359.50	10580.00	7817.00	7808.79	371.38	0.00	448883.06	738615.07	N 32 13 56.80 W 103 41 43.15	
	18500.00	90.00	359.50	10580.00	7916.91	7908.79	370.50	0.00	448983.05	738614.20	N 32 13 57.79 W 103 41 43.16	
	18600.00	90.00	359.50	10580.00	8016.81	8008.79	369.63	0.00	449083.04	738613.32	N 32 13 58.78 W 103 41 43.16	
	18700.00	90.00	359.50	10580.00	8116.72	8108.78	368.76	0.00	449183.03	738612.45	N 32 13 59.77 W 103 41 43.16	
	18800.00	90.00	359.50	10580.00	8216.62	8208.78	367.89	0.00	449283.02	738611.58	N 32 14 0.76 W 103 41 43.17	
	18900.00	90.00	359.50	10580.00	8316.53	8308.77	367.02	0.00	449383.01	738610.71	N 32 14 1.75 W 103 41 43.17	
	19000.00	90.00	359.50	10580.00	8416.43	8408.77	366.14	0.00	449483.00	738609.84	N 32 14 2.74 W 103 41 43.17	
	19100.00	90.00	359.50	10580.00	8516.33	8508.77	365.27	0.00	449582.99	738608.96	N 32 14 3.73 W 103 41 43.18	
	19200.00	90.00	359.50	10580.00	8616.24	8608.76	364.40	0.00	449682.98	738608.09	N 32 14 4.72 W 103 41 43.18	
	19300.00	90.00	359.50	10580.00	8716.14	8708.76	363.53	0.00	449782.98	738607.22	N 32 14 5.71 W 103 41 43.18	
	19400.00	90.00	359.50	10580.00	8816.05	8808.76	362.65	0.00	449882.97	738606.35	N 32 14 6.70 W 103 41 43.19	
	19500.00	90.00	359.50	10580.00	8915.95	8908.75	361.78	0.00	449982.96	738605.48	N 32 14 7.69 W 103 41 43.19	
	19600.00	90.00	359.50	10580.00	9015.86	9008.75	360.91	0.00	450082.95	738604.60	N 32 14 8.68 W 103 41 43.19	
	19700.00	90.00	359.50	10580.00	9115.76	9108.74	360.04	0.00	450182.94	738603.73	N 32 14 9.67 W 103 41 43.20	
	19800.00	90.00	359.50	10580.00	9215.67	9208.74	359.17	0.00	450282.93	738602.86	N 32 14 10.66 W 103 41 43.20	
	19900.00	90.00	359.50	10580.00	9315.57	9308.74	358.29	0.00	450382.93	738601.99	N 32 14 11.65 W 103 41 43.20	
	20000.00	90.00	359.50	10580.00	9415.48	9408.73	357.42	0.00	450482.92	738601.11	N 32 14 12.63 W 103 41 43.21	
	20100.00	90.00	359.50	10580.00	9515.38	9508.73	356.55	0.00	450582.91	738600.24	N 32 14 13.62 W 103 41 43.21	
	20200.00	90.00	359.50	10580.00	9615.29	9608.73	355.68	0.00	450682.90	738599.37	N 32 14 14.61 W 103 41 43.21	
	20300.00	90.00	359.50	10580.00	9715.19	9708.72	354.80	0.00	450782.89	738598.50	N 32 14 15.60 W 103 41 43.22	
	20400.00	90.00	359.50	10580.00	9815.10	9808.72	353.93	0.00	450882.88	738597.63	N 32 14 16.59 W 103 41 43.22	
	20500.00	90.00	359.50	10580.00	9915.00	9908.71	353.06	0.00	450982.87	738596.75	N 32 14 17.58 W 103 41 43.22	
	20600.00	90.00	359.50	10580.00	10014.90	10008.71	352.19	0.00	451082.86	738595.88	N 32 14 18.57 W 103 41 43.22	
Mesa Verde 17-8 Federal Com 4H PBHL	20650.59	90.00	359.50	10580.00	10065.45	10059.30	351.75	0.00	451133.45	738595.44	N 32 14 19.07 W 103 41 43.23	

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG- Depth Only	Original Borehole / Oxy Mesa Verde 17-8 Federal Com 4H Rev0 APS 04Jan18
	1	26.500	20650.590	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde 17-8 Federal Com 4H